



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 3, 2021
To: Council
From: Julia Beaty, staff
Subject: Updates on Offshore Wind Energy Development

The following materials are included behind this tab:

1. Briefing documents regarding the Council's offshore wind energy policy:
 - a. Revised offshore wind energy policy as recommended by the Ecosystem and Ocean Planning (EOP) Committee, incorporating edits from the New England Fishery Management Council's Habitat Plan Development Team, Habitat Advisory Panel (AP), and Habitat Committee as well as the Mid-Atlantic Council's EOP AP and Committee.
 - b. Revised offshore wind energy policy as recommended by the EOP Committee with revisions indicated in track changes.
 - c. Summary of 11/18/21 EOP AP meeting.
2. Summary of updates from the Bureau of Ocean Energy Management.
3. BOEM fact sheets on the Kitty Hawk Wind project.
4. Summary of US Wind project.
5. Letter from 9 states to BOEM on fisheries compensation

In addition, a summary of the 11/29/21 EOP Committee meeting will be posted to the Council's meeting page once it is available.

Since the October 2021 Council meeting, the Council submitted comment letters on the Notices of Intent to prepare Environmental Impact Statements for the Atlantic Shores Wind project off New Jersey and the Mayflower Wind project in the Massachusetts/Rhode Island Wind Energy Area. These two letters are available at: <https://www.mafmc.org/correspondence>.

Mid-Atlantic Fishery Management Council

Wind Energy Policy

DRAFT – November 29, 2021

Introduction

This document summarizes the Mid-Atlantic Fishery Management Council's (Council's) policies regarding offshore wind energy development. This document complements the Council's general policies on non-fishing activities and projects¹ and the preamble to all Council fish habitat policies.² The Council will review and consider revisions to this document on a periodic basis. The Council will consider the responses to and impacts of Council comments when conducting these reviews.

Policy Goal

The Council supports efforts to mitigate the effects of climate change, including the development of renewable energy projects, provided risks to the health of marine ecosystems, ecologically and economically sustainable fisheries, and ocean habitats are avoided. To the extent that they cannot be avoided, they should be minimized, mitigated, or compensated for.

Best management practices and stakeholder engagement

1. Best management practices³ should be employed throughout all phases of offshore wind development and operations to avoid adverse impacts on fish, their prey, and their habitats, and to prevent conflicts with other user groups, including recreational and commercial fisheries.
2. The Bureau of Ocean Energy Management (BOEM) and offshore wind developers should engage early and often with the fishing community. Outreach should include individual fishermen and fishing businesses, recreational and commercial fishing organizations, NOAA Fisheries, state resource management agencies, regional science entities, including the Responsible Offshore Science Alliance, other NGOs, the Regional Fishery Management Councils, and any other interested stakeholders. Engagement should focus on collaboration, shared problem identification, option generation, problem solving, and move beyond only information sharing and communication as its primary purpose and intent.
3. BOEM and developers should communicate in a timely manner how comments from the regional fishery management councils and other stakeholders were considered, as well as the impacts of those comments.

¹ Available at: http://www.mafmc.org/s/Policy_General_2015-12-15.pdf

² Available at: http://www.mafmc.org/s/Policy_Preamble_2015-12-15.pdf

³ [MAFMC Offshore Wind Best Management Practices Workshop \(2014\)](#); [BOEM Final Report on Best Management Practices and Mitigation Measures \(2014\)](#)

Project siting and environmental review

4. Developers should accurately map and characterize all benthic habitat types throughout the entire project area (including cable corridors), especially complex habitats and deep-sea coral habitats that are sensitive to impacts, in accordance with NOAA Fisheries' Recommendations for Mapping Fish Habitat.
 - a. Complex habitat is defined in [NOAA Fisheries' Recommendations for Mapping Fish Habitat](#) (March 2021) as: 1) Hard bottom substrates; 2) Hard bottom substrates with epifauna or macroalgae; and 3) Vegetated habitats (e.g., submerged aquatic vegetation and tidal wetlands).
 - b. These maps are essential for EFH consultations and to support other management and science needs.
 - c. Transmission cables, wind turbines, electrical service platforms, or other structures should not be placed in areas with complex habitats.
 - d. Surveys should be completed as early as possible in the development process with associated data shared to the maximum extent possible to facilitate the review of each project.
 - e. Robust survey information should be collected to facilitate micrositing of foundations and alternative cable routing if complex habitat is detected.
 - f. Habitat characterization and benthic monitoring should occur at all phases of the project: prior to and during construction, as well as during the operational phase to track changes over time.
5. The Environmental Impact Statement should evaluate the range of potential impacts from construction, operations, and decommissioning to fishery species and fisheries from physical habitat conversions and losses, scour and sedimentation, construction and operational noise, electromagnetic fields, and water-column hydrodynamic effects (including impacts to the Mid-Atlantic Cold Pool, as well as thermal changes and changes in currents that influence pelagic habitats). The information provided in the COP, including the detailed results of site assessment surveys and proposed environmental mitigation and monitoring measures, should support this evaluation. The EIS should clearly document how impact determinations were made.
 - a. Impacts to fisheries and habitats should be avoided; and if avoidance is not possible, they should be minimized and mitigated to the fullest extent possible.
 - b. All life history stages should be considered (i.e., egg through adult), and include activities such as spawning, breeding, feeding, and seasonal migrations.
 - c. Cumulative impacts should be assessed both within and beyond an individual project (across multiple projects within a single lease area) as well as across multiple wind energy projects across the region (considering the effects across adjoining lease areas), and considering other actions which impact the sustainability of the fisheries.

6. The Council endorses developing and analyzing alternatives in the Environmental Impact Statement that are explicitly designed to avoid, minimize, and mitigate habitat and fisheries impacts.
7. When ongoing research identifies new fisheries or habitat-related concerns in wind energy areas, BOEM should consider these results and data in siting and permitting decisions and apply the precautionary principle⁴.

Construction and operations

8. The technology that is least impactful to aquatic ecosystems should be used for transmission cable installation. This may include horizontal directional drilling to avoid impacts to sensitive fish habitat.
9. Export and inter-array cables should be buried to an adequate depth to reduce conflicts with other ocean uses, including fishing operations and fishery surveys, and to minimize effects of heat and electromagnetic field emissions. Cables should be monitored after installation and large storm events to ensure bathymetry is restored and to ensure cables remain buried. All cables should be removed during decommissioning.
10. If scour protection or cable armoring is needed, the materials should be selected based on value to commercial and recreational fishery species⁵. The locations where cable armoring materials (e.g., concrete mattresses) are installed should be documented, disseminated, and monitored. Natural materials, or materials that mimic natural habitats, should be used whenever possible. These materials should not be obtained from existing marine habitats. The materials used must not be toxic.
11. Boulder relocation should be minimized. If boulders or unexploded ordnance must be relocated, their new locations should be clearly documented and this information disseminated to the fishing community.
12. Noise generated by wind facilities should be minimized, including sounds produced during surveys (e.g., survey vessel operations and acoustic sampling devices), construction (e.g., installation vessel operations, pile driving, cofferdam installation), and operation (e.g., maintenance vessel operations, spinning turbines).

⁴ The Food and Agriculture Organization of the United Nations states “Management according to the precautionary approach exercises prudent foresight to avoid unacceptable or undesirable situations, taking into account that changes in fisheries systems are only slowly reversible, difficult to control, not well understood, and subject to change in the environment and human values” <https://www.fao.org/3/w3592e/w3592e07.htm>

⁵ For examples, see:

Glarou, M., M. Zrust and J. C. Svendsen (2020). "Using Artificial-Reef Knowledge to Enhance the Ecological Function of Offshore Wind Turbine Foundations: Implications for Fish Abundance and Diversity." *Journal of Marine Science and Engineering* 8(5).

Hermans, A., O. G. Bos and I. Prusina (2020). *Nature-Inclusive Design: a catalogue for offshore wind infrastructure*. Den Haag, The Netherlands, Wageningen Marine Research: 121p.

Lengkeek, W., K. Didderen, M. Teunis, F. Driessen, J. W. P. Coolen, O. G. Bos, S. A. Vergouwen, T. C. Raaijmakers, M. B. de Vries and M. van Koningsveld (2017). "Eco-friendly design of scour protection: potential enhancement of ecological functioning in offshore wind farms. Towards an implementation guide and experimental set-up." (17-001): 87p.

13. Developers should avoid in-water activities during spawning seasons or settlement periods (especially for species that have distinct spawning locations and may be sensitive to noise, for example Atlantic cod, or are sensitive to sedimentation impacts, such as longfin squid). If not able to avoid these periods, developers should use noise mitigating and dampening measures for any in-water activities that produce sounds that may injure organisms or alter their behavior. Construction should be monitored in real-time to detect the presence of spawning aggregations, and construction restrictions should be implemented to protect these aggregations as needed.
14. When cooling systems are considered for specific projects (e.g., at AC/DC conversion stations), impacts on marine species and habitats should be fully evaluated and monitored. Effects include but are not limited to the loss of zooplankton and fish eggs/larvae due to water entrainment and associated temperature differentials from discharge waters, which may impact both the entrained species and their predators. Impacts of cooling systems should be avoided or minimized.
15. Consideration should be given to utilization of existing fishing community and other stakeholder resources (e.g., fishing vessels) for construction and operations activities.

Navigation and safety

16. The Council supports turbine and transit lane arrangement and spacing that will reduce impacts to fishing vessel navigation⁶.
 - a. These issues should be coordinated across offshore wind projects and developers.
 - b. Developers should consult directly with affected fishermen to develop project layouts that minimize impacts.
17. Threats to safety and navigation (e.g., radar disruption, vessel allisions and collisions, security threats, and impacts on search and rescue efforts) should be routinely monitored within and around wind projects. Safety issues should be efficiently identified and addressed using best management practices (see footnote 1).
18. For floating wind turbines, locations of inter array cables, mooring lines, and anchors in the water column around each turbine should be clearly marked using the most appropriate technology.
19. Wind service platforms should implement adequate fuel spill response plans and protocols⁷ for support vessels and platforms.

⁶ Navigation encompasses both fishing and transit.

⁷ Consistent with the US Coast Guard, US Environmental Protection Agency, Occupational Safety & Health Administration/HAZMAT, and other state or Federal requirements.

Research and monitoring

20. Research and monitoring should be conducted at project and regional scales to understand project-specific and cumulative effects on aquatic species, habitats, and ecosystems. Important research topics include but are not limited to:
 - a. Acoustic issues: impacts of geotechnical and geophysical surveys, benefits of applying additional noise dampening technology during construction or operations, and differential acoustic impacts of larger vs. smaller turbines on the ecosystem, including on fish behavior.
 - b. Short and long-term impacts of wind facility operations on aquatic species and ecosystems: impact-producing factors include habitat changes, specifically reef effects and habitat conversion, electromagnetic fields, hydrodynamic changes, and turbine noise. Individually and in combination these factors may alter managed species' distributions, behaviors, and predator-prey relationships.
 - c. The Council develops and routinely updates a list of research priorities, including priorities related to fisheries and offshore wind. Work supporting these priorities is also recommended.
 - d. Monitoring should occur 2-3 years before, during, and after construction for the life of the project at regular intervals.
 - e. There may be important area-specific / project-specific issues that require tailored research in project areas to understand effects that go beyond what is described above. Once preliminary impacts are determined, expertise should be sought (from the Fishery Management Councils) to fully understand impacts.
21. Developers should coordinate monitoring survey designs and methods across projects wherever possible to generate datasets that can be used in combination. Benthic habitat, geological and geophysical, and fisheries surveys should be coordinated to ensure that the prosecution of one survey does not affect the results of another. Coordinated monitoring will support cumulative impacts analysis.
22. Consideration should be given to the impacts of research and monitoring on fisheries. For example, research which may negatively impact fisheries should not be carried out during peak fishing seasons. Developers should consult with the regional fishery management councils and commercial and recreational fishermen regarding the most important times of year.
23. Monitoring and survey designs should be consistent with regionally developed survey mitigation and monitoring protocols, including the Responsible Offshore Science Alliance's monitoring framework and guidelines⁸, NOAA Fisheries regional survey mitigation protocols (under development), and NOAA Fisheries habitat monitoring recommendations (under development).
24. Developer-funded monitoring and research data should be made publicly available on a timely and regular basis, while protecting fishermen's confidential business information.

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25. Consideration should be given to utilization of existing fishing community and other stakeholder resources (e.g., fishing vessels) for research and monitoring activities.

Compensation and mitigation

26. The Council supports the development of a compensatory mitigation fund for damages that occur to the marine environment and fish habitat as well as damages or losses to fishing vessels or their gear, or reductions in operations/revenues, resulting from wind activities.
27. The Council supports the creation of a fisheries development and research fund related to ecosystem changes associated with offshore wind energy development, for example to facilitate development of new fisheries or fishing techniques or enhance existing fisheries.
28. Federal and state-operated fishery independent monitoring surveys are critically important for stock assessments and setting fishery catch limits. Impacts to these surveys should be avoided whenever possible and minimized and mitigated where avoidance is not possible.

DRAFT

Developed by the New England Fishery Management Council (NEFMC) Habitat Plan Development Team. Edits made by the NEFMC Committee and Advisory Panel are shown in track changes. *Additional edits suggested by NEFMC and MAFMC staff are indicated with bold, italicized track changes.* Edits from the MAFMC EOP AP are highlighted in yellow. Edits from the MAFMC EOP Committee are highlighted in blue.

Policy Goal

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- f. Habitat characterization and benthic monitoring should occur at all phases of the project: prior to and during construction, as well as during the operational phase to track changes over time.

5. ~~The Construction and Operations Plan and Environmental Impact Statement~~ should evaluate the range of potential impacts from construction, operations, and decommissioning to fishery species and fisheries from physical habitat conversions and losses, scour and sedimentation, construction and operational noise, electromagnetic fields, and water-column hydrodynamic effects (including impacts to the Mid-Atlantic Cold Pool, as well as thermal changes and changes in currents that influence pelagic habitats). The information provided in the COP, including the detailed results of site assessment surveys and proposed environmental mitigation and monitoring measures, should support this evaluation. The EIS should clearly document how impact determinations were made.

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6. The Council endorses developing and analyzing alternatives in the Environmental Impact Statement that are explicitly designed to avoid, minimize, and mitigate habitat and fisheries impacts.

7. When ongoing research identifies new fisheries or habitat-related concerns in wind energy areas, BOEM should consider these results and data in siting and permitting decisions and apply the precautionary principle².

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 - The Council develops and routinely updates a list of research priorities, including priorities related to fisheries and offshore wind. Work supporting these priorities is also recommended.
 - Monitoring should occur 2-3 years before, during, and after construction for the life of the project at regular intervals.
 - There may be important area-specific / project-specific issues that require tailored research in project areas to understand effects that go beyond what is described above. Once preliminary impacts are determined, expertise should be sought (from the Fishery Management Councils) to fully understand impacts.
21. Developers should coordinate monitoring survey designs and methods across projects wherever possible to generate datasets that can be used in combination. Benthic habitat, geological and geophysical, and fisheries surveys should be coordinated to ensure that the prosecution of one survey does not affect the results of another. Coordinated monitoring will support cumulative impacts analysis.
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23:24. Developer-funded monitoring and research data should be made publicly available on a timely and regular basis, while protecting fishermen's confidential business information.

24:25. Consideration should be given to utilization of existing fishing community and other stakeholder resources (e.g., fishing vessels) for research and monitoring activities.

Compensation and mitigation

25:26. The Council supports the development of a compensatory mitigation fund for damages that occur to the marine environment and fish habitat as well as damages or losses to fishing vessels or their gear, or reductions in operations/revenues, resulting from wind activities.

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26:28. Federal and state-operated fishery independent monitoring surveys are critically important for stock assessments and setting fishery catch limits. Impacts to these surveys should be identified and mitigated—should be avoided whenever possible and minimized and mitigated where avoidance is not possible.



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Ecosystem and Ocean Planning Advisory Panel Webinar Meeting Summary

Advisory Panel (AP) Attendees

Fred Akers, Eleanor Bochenek, Mark Binstead, Bonnie Brady, Jeff Deem, Peter deFur, Jeremy Firestone, Willy Goldsmith, Peter Himchak, Fiona Hogan, Jeff Kaelin, Meghan Lapp, Carl LoBue, Pam Lyons Gromen, Phil Simon, Judith Weis

Other Attendees

Calvin Alexander, Julia Beaty (MAFMC staff), Doug Christel (NMFS), Jenny Couture (NEFMC staff), Conor Fagan (Clean Ocean Action), James Fletcher (United National Fisherman's Association), Brooke Handley, Caela Howard (Vineyard Wind), Carliane Johnson, Zachary Klein (Clean Ocean Action), Ron Larsen (Sea Risk Solutions), Scott Mackey, Kari Martin, Sophie Swetz, Kate Wilke (EOP Committee Chair), Cindy Zipf

Background

The Mid-Atlantic Fishery Management Council (MAFMC) adopted a [policy on offshore wind energy development](#) in December 2015. The New England Fishery Management Council (NEFMC) adopted an identical policy in 2018. Offshore wind energy development has continued to advance at a rapid pace since that time and both Councils have written many [joint comment letters](#) on the subject. The offshore wind policy helps to inform these comment letters.

The NEFMC Habitat Plan Development Team (PDT) developed recommendations for revisions to this policy to reflect lessons learned over the past several years. The NEFMC Habitat AP and Committee reviewed these recommendations on October 26, 2021. The MAFMC may consider revisions to their version of the policy during their meeting on December 13-16, 2021. The MAFMC's Ecosystem and Ocean Planning (EOP) AP and Committee will both meet in November 2021 to develop recommendations to be considered by the MAFMC. The policies for the two Councils need not be identical; however, there are benefits to maintaining similar policies as the two Councils frequently write joint comment letters on offshore wind energy development.

Meeting Objectives

- Review NEFMC Habitat PDT, Habitat Advisory Panel, and Habitat Committee recommendations for revisions to offshore wind energy policy.
- Develop recommendations to the Ecosystem and Ocean Planning Committee regarding offshore wind energy policy.

Meeting Summary

The EOP AP was broadly supportive of the revisions recommended by the NEFMC Habitat PDT, AP, and Committee. The EOP AP recommend additional edits which are indicated in the attached document. The rationale behind some of these edits, as well as key points of discussion which did not result in suggested edits, are summarized below. Please refer to the attached document for a complete summary of the specific changes recommended by the EOP AP.

The AP discussed whether it was necessary to specify “ecologically and economically” sustainable fisheries in the policy goal statement, as recommended by the NEFMC Habitat AP and Committee. They ultimately decided to leave this language unchanged. They also agreed that the goal statement should be modified to clarify that risks should first be avoided, and to the extent that they cannot be avoided, should be minimized, mitigated, or compensated for. The AP discussed other potential revisions to the policy goal, but ultimately did not recommend other changes to this section.

The AP discussed the importance of considering cumulative impacts. For example, the impacts of a single wind project considered in isolation may be quite different than the cumulative impacts of the many projects planned for development along the east coast. In addition, these impacts occur in the context of multiple other actions which are impacting fisheries.

Some AP members questioned if consideration should be given to how compensatory mitigation is funded. The AP ultimately agreed with the approach of not addressing the source of funding. For example, the Council cannot engage in lobbying activities and some potential sources of funds would require legislation changes.

One AP member said there may be benefits to leaving some scour protection and cable armoring materials in place after decommissioning, for example if they act as artificial reefs and become fishing hot spots. The AP ultimately agreed not to add language along these lines to the policy but noted that the policy may be revised again before any projects reach the decommissioning stage and this could be given further consideration in the future. In addition, it may be beneficial to plan for full removal at this stage and re-evaluate once projects approach the decommissioning stage.

The AP agreed that the recommendations in the policy document should not focus on specific technologies because new technologies are being developed. They agreed to focus instead on concepts such as using the least impactful technology.

The AP discussed the role of the Bureau of Safety and Environmental Enforcement in environmental and safety compliance and monitoring for wind energy projects. This role will become more important as more projects move into the construction, operations, and maintenance phases. The Council may wish to engage more with this agency in the future.

One AP member recommended providing a reference to commonly used fisheries management terms and acronyms with the policy document.

The AP recommended that, once adopted, the Council should send their revised policy to all states and other relevant organizations and agencies.

Public Comment

Zachary Klein, representing Clean Ocean Action, expressed concerns about limited science, knowledge gaps, and cumulative effects. He recommended that BOEM take knowledge gaps into account in their decision making and use a precautionary approach. He also recommended research

on the ecosystem impacts of fishing activities that are displaced by offshore wind energy development.

BOEM Briefing Agenda Items for December NEFMC and MAFMC Meetings

- The Bureau of Ocean Energy Management (BOEM), working with the National Marine Fisheries Service and affected coastal states, is developing guidance to be used in developing plans and environmental reviews for reducing or avoiding impacts from offshore wind projects on commercial and recreational fisheries and fishing. For Information, meetings being held and how to submit comments please go here: <https://www.boem.gov/renewable-energy/fishing-industry-communication-and-engagement>
- New York Bight Final Sale Notice is still expected in late 2021/early 2022. There will be a follow-up meeting with the fishing industry following the publication of the Final Sale Notice.
- Central Atlantic Leasing: BOEM has begun preliminary work on identifying planning areas for wind energy development in the Central Atlantic (roughly Delaware to Cape Hatteras). The results of initial data collection and the draft planning areas will be shared during a series of stakeholder specific engagement meetings, refined based on feedback into a draft Call Area, and then shared at a Regional Interagency Task Force Meeting in February 2022.
- Gulf of Maine: BOEM is in receipt of a research lease application from the State of Maine for an offshore wind demonstration project. BOEM is considering this application as well as the potential for commercial development in the Gulf of Maine.
- Anticipated projects beginning environmental review in 2022 include the following:

Project Name	NOI	DEIS	FEIS	ROD
COPs submitted and permitting timetables published				
Ocean Wind	3/30/2021	5/27/2022	2/17/2023	3/31/2023
Revolution Wind	4/30/2021	7/1/2022	3/24/2023	5/1/2023
Empire Wind	6/24/2021	8/12/2022	4/28/2023	6/12/2023
New England Wind (formerly VW South)	6/30/2021	8/26/2022	6/23/2023	7/23/2023
CVOW Commercial	7/2/2021	8/1/2022	5/1/2023	6/1/2023
Kitty Hawk	7/30/2021	9/30/2022	6/23/2023	8/3/2023
Atlantic Shores	9/30/2021	12/2/2022	8/4/2023	9/29/2023

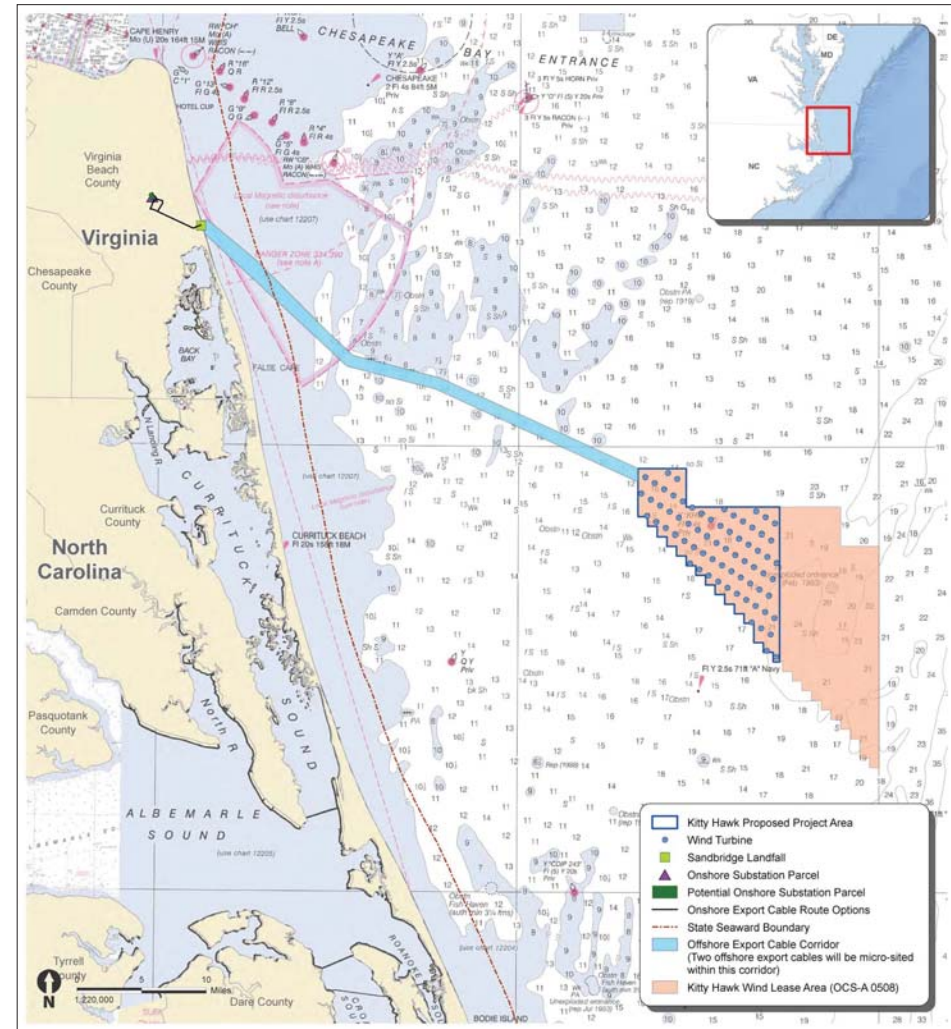
Kitty Hawk Offshore Wind Project

Kitty Hawk Project Overview

The Kitty Hawk Offshore Wind Farm Project consists of:

- Up to 69 offshore wind turbines and associated foundations.
- One offshore electrical service platform.
- Inter-array cables that connect the wind turbines and the electrical service platform.
- Up to two offshore export cables within a designated corridor with landfall in Virginia Beach, VA.
- Onshore export cables and one onshore substation in Virginia Beach, VA.
- Other supporting infrastructure (e.g., operations and maintenance facility).

The Kitty Hawk Lease Area (OCS-A-0508) covers 122,159 acres (49,436 hectares) and is located approximately 27 miles (44 kilometers) offshore Corolla, NC. The offshore export cables would be buried below the seabed surface. The onshore export cables, substation, and grid connections would be located in Virginia Beach, VA.



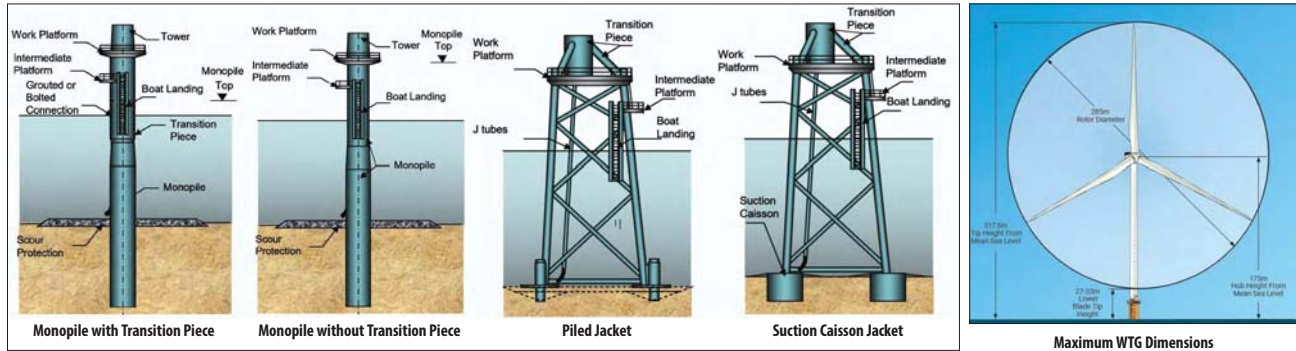


Kitty Hawk Offshore Wind Project

Project Design Envelope

A project design envelope is a permitting approach that allows a lessee to define a range of design parameters within a Construction and Operations Plan. BOEM then analyzes the maximum impacts that could occur within the range of the design parameters — referred to as the “maximum design scenario.”

Representative design parameters for the Kitty Hawk project are outlined below. Refer to Kitty Hawk Wind’s Construction and Operations Plan for a detailed explanation of the project design envelope.



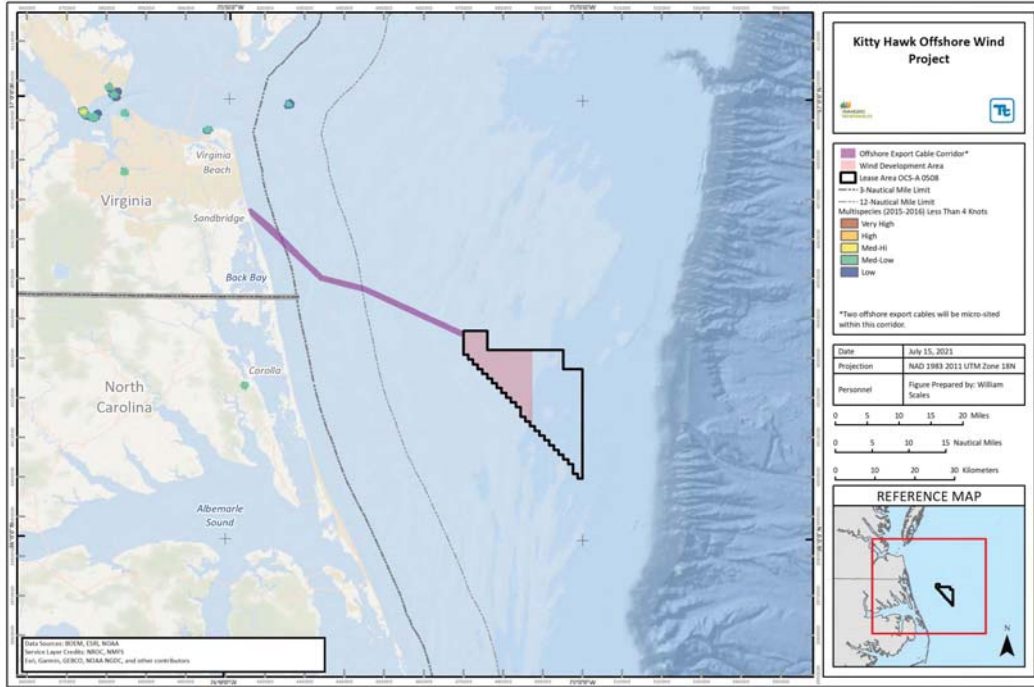
Project Component	Representative Project Design Parameters
Foundations	<ul style="list-style-type: none"> • Installation of one or more foundation types: monopile, piled jacket, and up to three suction caisson jacket • Installation using hammered pile driving (for monopiles and/or piled jacket foundations) • Scour protection may be installed around all foundation types
Wind Turbine Generators (WTGs)	<ul style="list-style-type: none"> • Up to 69 WTGs • Rotor diameter up to 935 feet (285 meters) • Hub height up to 574 feet (175 meters) above mean sea level • Tip height up to 1,041 feet (317.5 meters) above mean sea level • Lowest blade tip height 88 feet (27 meters) above mean sea level
Inter-Array Cables	<ul style="list-style-type: none"> • 66-kilovolt, 3-core cables buried up to 5 to 8 feet (1.5 to 2.5 meters) beneath the seabed • Maximum total cable length 149 miles (240 kilometers) • Jet trencher, mechanical trencher, and free-lay and post-lay burial installation • Proposed protection if target cable burial depth is not achieved includes rock armor, gabion rock bags, concrete mattresses, and protective half-shells
Offshore Export Cables	<ul style="list-style-type: none"> • Up to two 275-kilovolt export cables buried up to 5 to 8 feet (1.5 to 2.5 meters) beneath the seabed • Minimum separation distance between circuits is 164 feet (50 meters) • Maximum total corridor length is 50 miles (80 kilometers) • Jet trenching, jet plow, mechanical plow, and free-lay and post-lay burial installation, with dredging in some locations to achieve burial depth • Proposed protection if target cable burial depth is not achieved includes rock armor, gabion rock bags, concrete mattresses, and protective half-shells
Electrical Service Platform (ESP)	<ul style="list-style-type: none"> • One ESP installed atop monopile, piled jacket, or suction caisson jacket foundation
Onshore Facilities	<ul style="list-style-type: none"> • Landfall of export cables will be completed via horizontal directional drilling • Construction work area for the onshore substation at Corporate Landing to disturb up to 32.4 acres (13.1 hectares) • Onshore transmission and interconnection cables with total maximum cable length of 7 miles (11.3 kilometers) • Up to six 275-kilovolt onshore export cables and two fiber optic cables • Up to 128 acres (52 hectares) of disturbed area for the onshore export cable corridors
Operations & Maintenance Facilities	<ul style="list-style-type: none"> • Portsmouth, VA • Newport News, VA • Cape Charles, VA • Chesapeake, VA



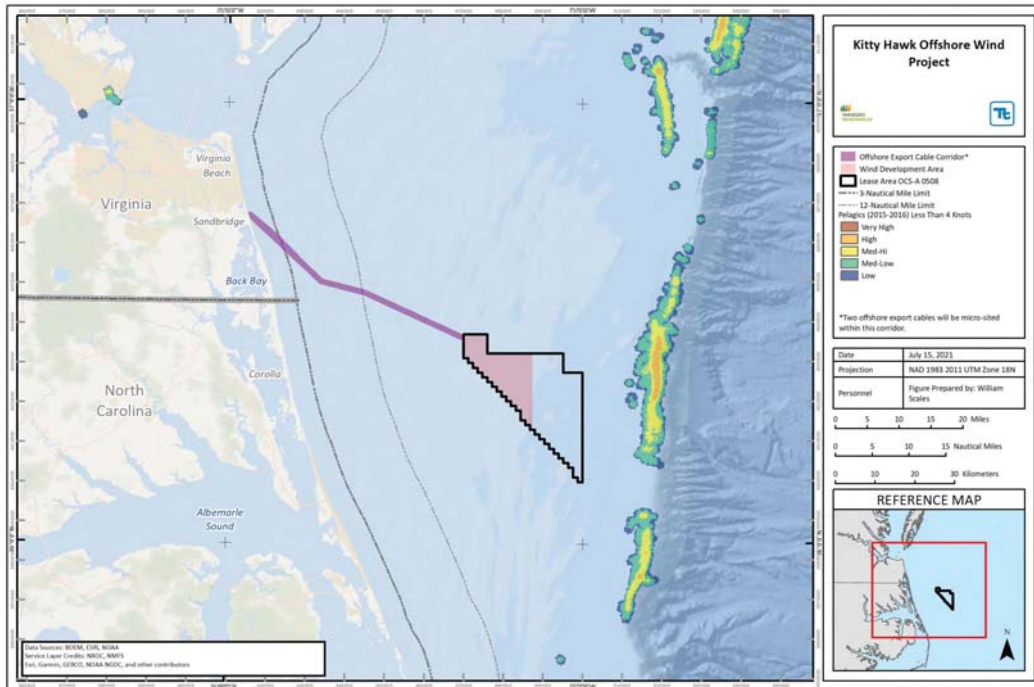


Kitty Hawk Offshore Wind Project

Commercial Fishing Density



VMS of Vessels with Multispecies Permits Fishing Intensity (< 4 knots) 2015-2016



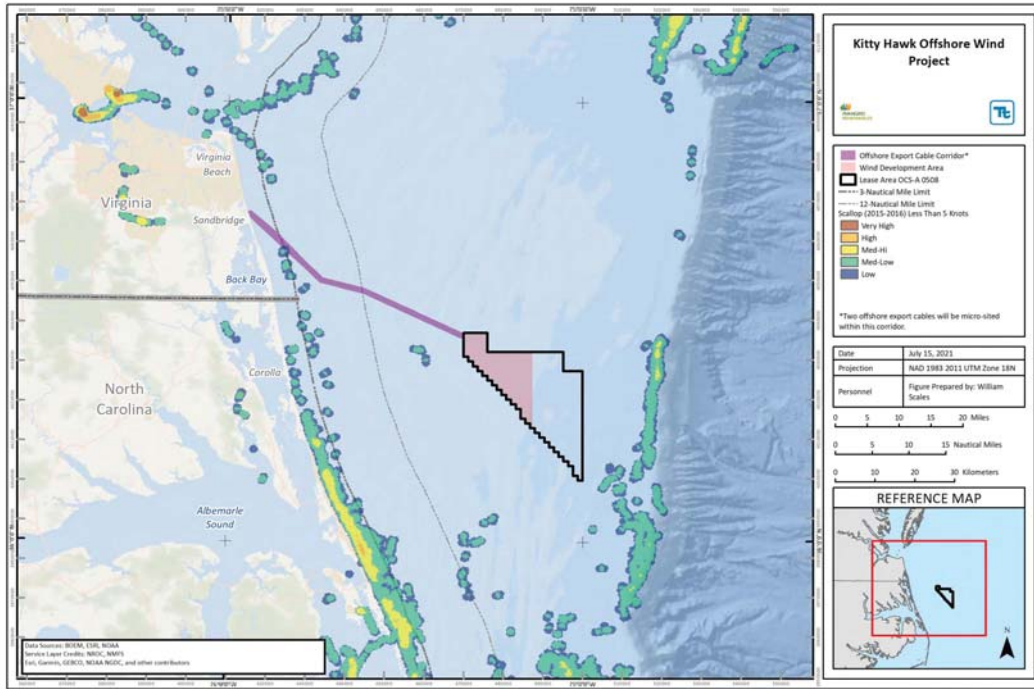
VMS of Vessels with Pelagic Permits Fishing Intensity (< 4 knots) 2015-2016



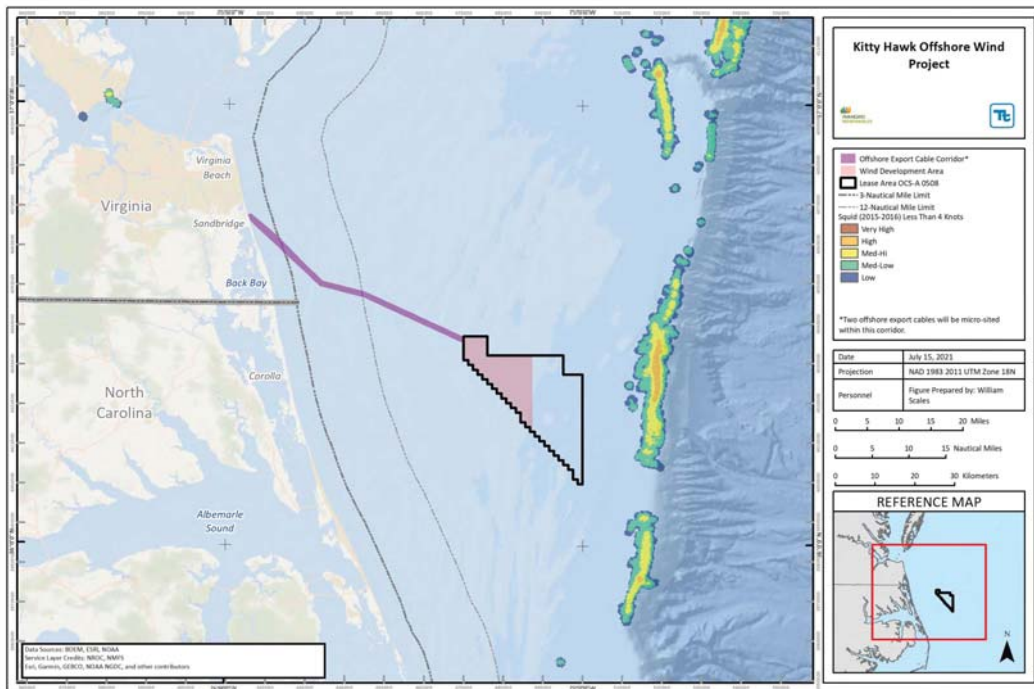


Kitty Hawk Offshore Wind Project

Commercial Fishing Density



VMS of Scallop (*Pectinidae*) Permit-holding vessels (< 5 knots) 2015-2016



VMS of Squid (*Doryteuthis and Illex*) Fishing Intensity (< 4 knots) 2015-2016

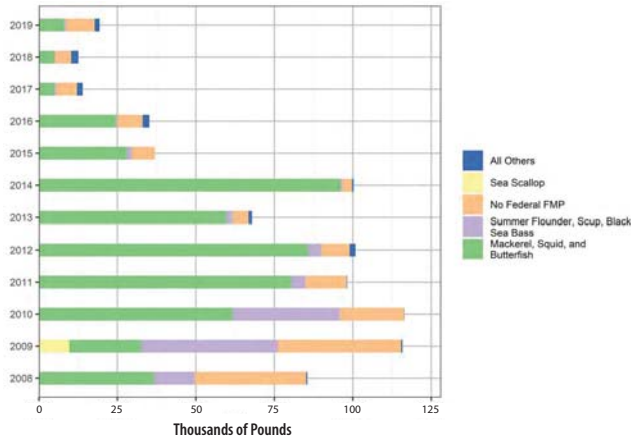




Kitty Hawk Offshore Wind Project

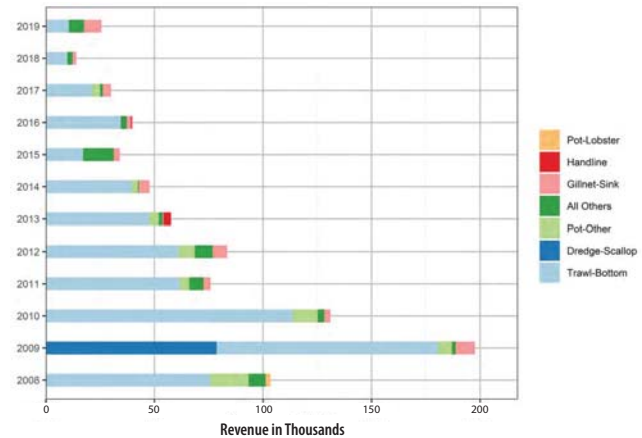
Fishery Landings, Gear Type, and VMS Activity

Landings from Most Impacted Fishery Management Plans



Landings from most impacted Fishery Management Plans for the Kitty Hawk Offshore Wind project area. The category “No Federal FMP” contains a variety of species that are not federally regulated, such as: smooth and chain dogfish, whelk, and menhaden, (there are close to 78 species without federal FMPs caught in the project area).

Revenue from Select Gear Types



Revenue from select commercial fishery gear types for the Kitty Hawk Offshore Wind project area.

Revenue by Port

The ten most impacted ports (by revenue) are listed in the table. These ports are estimated to receive the most landings from fishing done within the Kitty Hawk Offshore Wind project area. The table displays each port’s landings breakdown by area and present the cumulative revenue from 2008 to 2019. All numbers have been rounded to the nearest thousand.

City	State	12 Year Revenue
North Kingstown	RI	\$157,000
Wanchese	NC	\$107,000
All Others	–	\$104,000
Davisville	RI	\$73,000
Engelhard	NC	\$71,000
Hampton	VA	\$68,000
Newport News	VA	\$57,000
Cape May	NJ	\$52,000
Beaufort	NC	\$45,000
New Bedford	MA	\$35,000

Source: National Marine Fisheries Service. Descriptions of Selected Fishery Landings and Estimates of Vessel Revenue from Areas: A Planning-level Assessment. Accessed at: https://www.greatatlanticfisheries.noaa.gov/ro/iso/reports/WIND/WIND_AREA_REPORTS/Kitty_Hawk_Wind.html



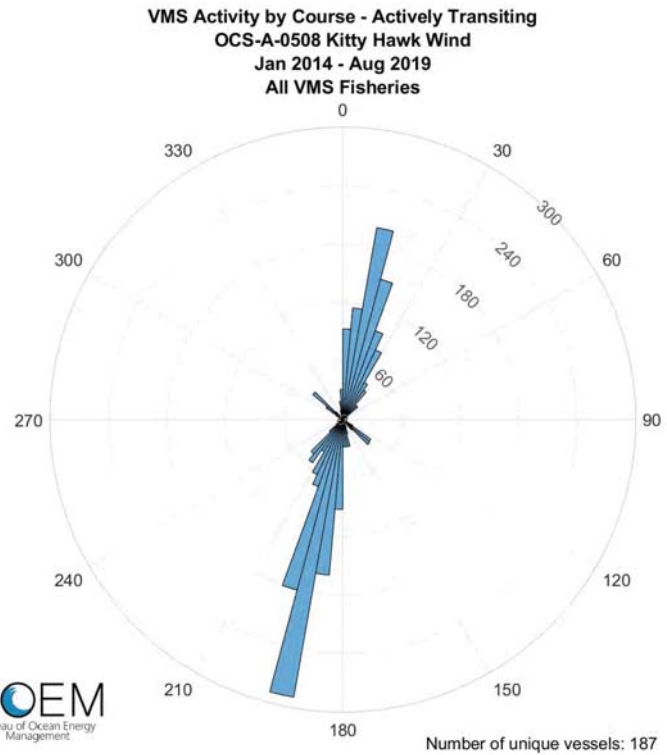
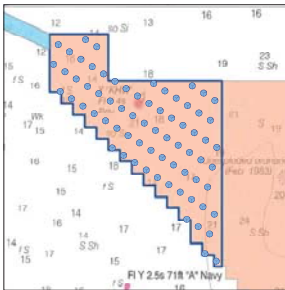


Kitty Hawk Offshore Wind Project

VMS Activity by Course - Actively Transiting OCS-A-0508 Kitty Hawk Jan 2014 - Aug 2019 All VMS Fisheries

Vessel Monitoring System activity in the Kitty Hawk project area for actively transiting vessels for all VMS fisheries.

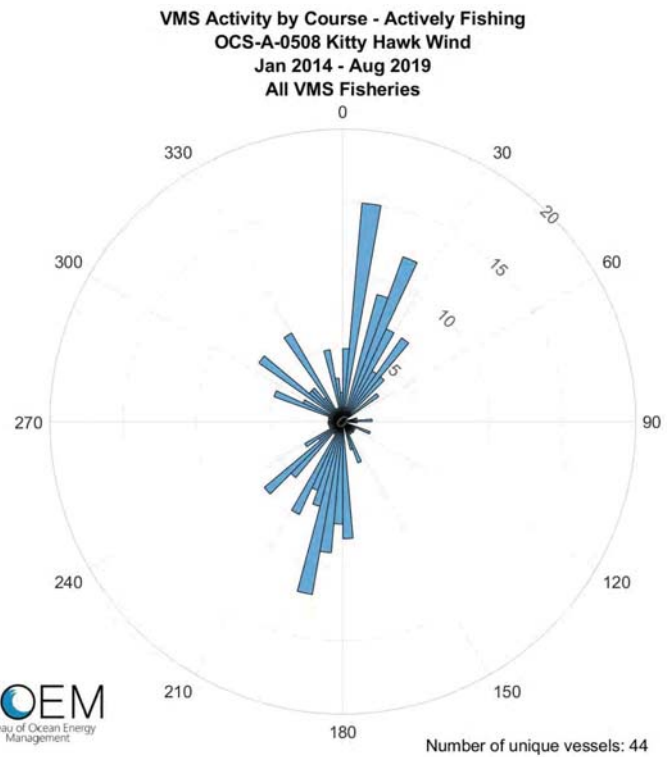
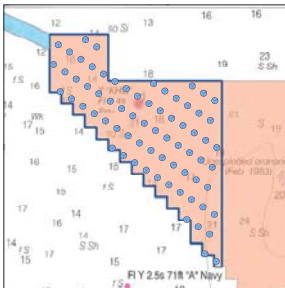
Indicative Turbine Layout



VMS Activity by Course - Actively Fishing OCS-A-0508 Kitty Hawk Jan 2014 - Aug 2019 All VMS Fisheries

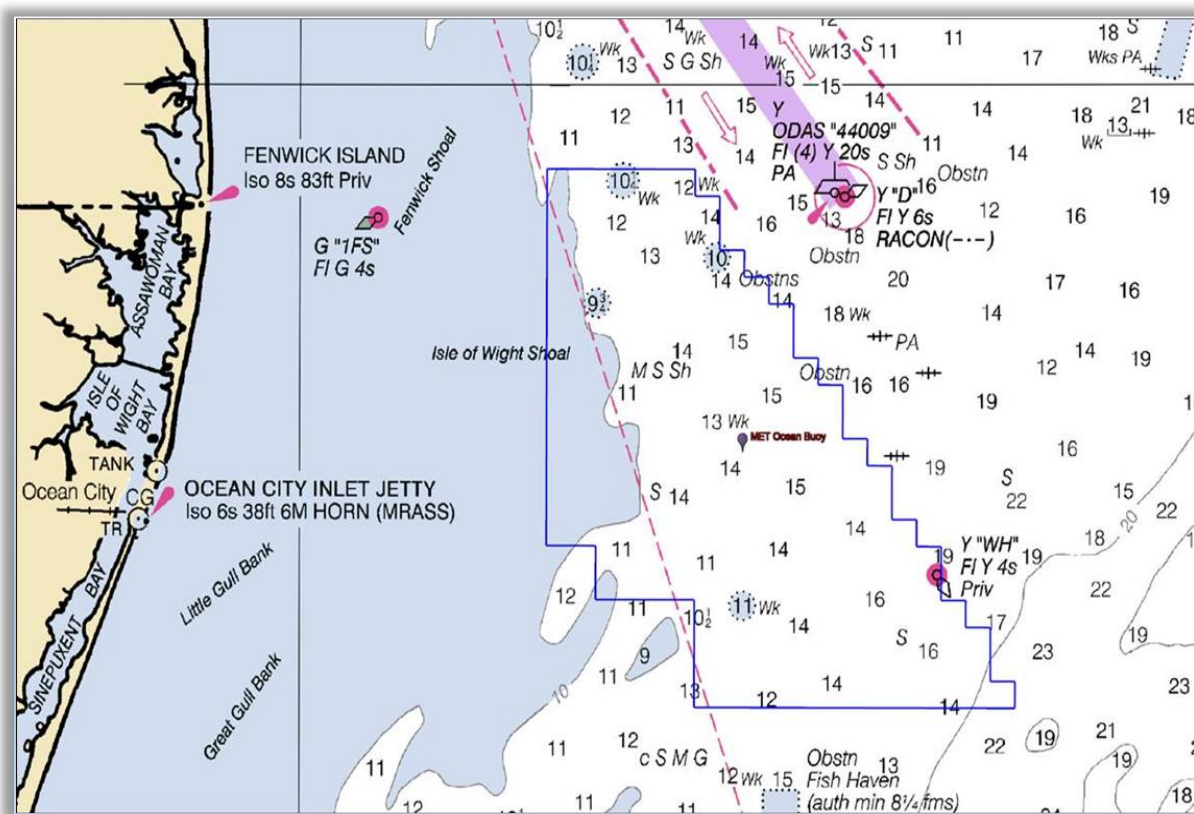
Vessel Monitoring System activity in the Kitty Hawk project area for vessels actively fishing for all VMS fisheries.

Indicative Turbine Layout



US Wind – MAFMC Brief 13 December 2021

US Wind was founded in 2011 and has established its position as Maryland’s leader in offshore wind development. In 2014, US Wind acquired a federal Lease area off the coast of Maryland. The Lease area, about 80,000 acres in size, has the capacity to generate approximately 1,500 megawatts (MW) of offshore wind energy, which is enough electricity to power more than half a million homes. In 2017, the company was awarded Offshore Renewable Energy Credits (ORECs) from the state of Maryland for its MarWin project, an offshore wind facility that will generate approximately 270 MW of clean, renewable electricity via 22 turbines or less in the southeasternmost portion of the Lease area.



The passage of Maryland’s *Clean Energy Jobs Act in 2019* increased the state's offshore wind energy requirements, calling for an additional 1,200 MW to be procured from developers with projects near the state's coast. In 2021, US Wind applied to the state of Maryland for additional ORECs, which would include up to 82 additional turbines to the Lease area and start generating power in 2026.

In November 2021, US Wind submitted an updated Construction and Operations Plan (COP) to the Bureau of Ocean Energy Management (BOEM). US Wind is working with BOEM to ensure the COP is deemed sufficient and complete for processing under the National Environmental Policy Act.



As part of the ongoing site characterization efforts, the survey vessel *MV Fugro Brasilis*, will begin conducting geophysical surveys in the US Wind Lease area and along the export cable corridor in December 2021. At the same time, the *PSV Regulus* will also begin geotechnical survey operations in the Lease area conducting boring operations using a mobilized marine drill rig and seabed frame. Survey activities are expected to continue into April 2022.

US Wind continues to implement extensive efforts to minimize impacts to marine life during survey operations. Expert Protected Species Observers are aboard each vessel to monitor for the presence of protected species, such as the North Atlantic right whale, and to ensure that appropriate measures are taken to protect these species.

US Wind is committed to early, often, and continuous communications with the fishermen and other mariners in our region, with direct engagement being the highest priority. Our company has partnered with Sea Risk Solutions to be our onshore fisheries liaisons and will provide an offshore fisheries representative aboard our geophysical survey vessel. These personnel will aid our outreach and communications efforts with fishermen in Maryland and the greater Delmarva region. We are eager to hear from and listen to local fishermen and mariners on all aspects of our offshore project activities so that we can understand each other's interests and requirements, coordinate activities, collaborate to ensure mutual success, and coexist peacefully.

Amanda Lefton, Director
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

November 12, 2021

Dear Director Lefton:

Following the June 4, 2021, letter to President Biden¹, the nine signatory regional Atlantic States (“States”) convened to discuss the importance of federal-state partnership in realizing regional offshore wind development goals. More specifically, the States have focused on the need for and benefits of regional natural resource impact assessment and mitigation frameworks for reasonably foreseeable and demonstrated adverse impacts on marine resources, fisheries, habitats, and local cultures. As you are aware, the States have begun to collaborate on a fisheries compensation framework with the Bureau of Ocean Energy Management (BOEM) and NOAA Fisheries. Through this collaboration, BOEM has committed to use its existing authority with support by NOAA Fisheries and with stakeholder and public input to establish an agreeable, standardized compensatory fisheries mitigation framework by March 2022.

Our discussions to-date on compensatory mitigation efforts are informed by states’ experiences with proposals to site and develop the nation’s first commercial scale offshore wind farms. These discussions have highlighted the need for a preliminary framework for how compensatory mitigation should be addressed in our region, perhaps as a component of national guidance from BOEM for the U.S. offshore wind industry as a whole. Compensatory fisheries mitigation (or impact fees) negotiations to this point have largely varied due to the lack of an established standardized mitigation framework and criteria and resulting outcomes have varied across jurisdictions. This has resulted in inconsistencies in estimating impacts to fisheries and the agreed-upon funds used to compensate for such impacts. Additionally, due to the regional nature of commercial fishing, this approach may preclude distributions of compensatory mitigation to all affected parties, e.g., those who fish in federal waters in the project area, regardless of state regulatory jurisdiction, creating inequities for both the fishing and offshore wind development industries.

It is our understanding that BOEM intends to encourage offshore wind developers to use its standardized fisheries compensatory mitigation framework in preparing Construction and Operations Plans and environmental impact assessments. This approach would provide a uniform framework, methodology, criteria, and process for calculating economic impacts and commensurate compensatory mitigation for impacts to fisheries that is consistent, equitable, and transparent. It would also support increased efficiency and enhanced coordination and has potential to reduce uncertainty for offshore wind developers, states, regions, and fishing communities. Further, this approach would encourage and provide a financial incentive for offshore wind developers to design projects which apply the mitigation hierarchy of first avoiding potential impacts to fisheries, attempting to minimize impacts when avoidance is not possible, and then implementing compensatory mitigation measures as the final step in the process. This mitigation hierarchy would be in addition to other steps BOEM has taken to ensure that areas of greatest importance to commercial fishing are not leased.

¹ Joint Governors’ Letter to the Biden Administration on Prioritization of Offshore Wind Development, June 4, 2021 (enclosed)

Through initial discussions, the States have identified the topics below for continued discussion with BOEM regarding its development of an efficient and effective compensatory fisheries mitigation framework. The States believe that these foundational topics require full consideration and discussion with BOEM, NOAA, and other federal agencies, as well as the fishing industry and offshore wind developers, in order to develop mutual understanding and agreement on a mitigation framework that will provide equity and certainty for affected fishing communities, state and federal agencies, and the offshore wind industry:

- Clarification of the pertinent federal and state agency authorities, jurisdictions, and processes to ensure that the compensatory fisheries mitigation framework is not incompatible with any applicable federal or state permitting or federal consistency review processes and does not limit or undermine state or federal authorities;
- Ensuring that offshore wind developers – per the National Environmental Policy Act (NEPA) – design projects in a way to first avoid potential impacts to fisheries and critical habitats, and where avoidance is not possible, minimize such impacts. Developers should ensure this is accomplished through robust and meaningful engagement with the fishing community that results in collaborative project design; then as necessary deploy mitigation measures, including compensatory mitigation, for impacts that cannot be avoided or reasonably minimized;
- Clarification of the scope of what should be considered in assessing compensatory mitigation, potentially including but not limited to: gear loss, temporary displacement during pre-construction surveys, temporary and permanent displacement during construction and post-construction operational constraints, decommissioning, shoreside, supply chain, and coastal community impacts, habitat and ecosystem impacts, short- and long-term impacts to fish stocks, and reasonably foreseeable cumulative impacts;
- Determining best available data sources and delineating appropriate methodologies and criteria for undertaking data assessments to determine effects on fisheries resources and valuation assessments to determine compensation estimates. This would take into consideration varying geographies, and data availability, and evaluate ways to incorporate new data into these approaches over time;
- Ensuring a schedule with milestones for early and regular engagement with and establishment of meaningful roles for members of the commercial and for-hire fishing industries in both the creation and implementation of the mitigation framework. The States are committed to working alongside BOEM to provide opportunities for input through existing channels (e.g., state working groups) and offer a stepwise process to vet questions and concerns, including prior to and during BOEM’s public comment periods;
- Identifying future data and monitoring needs to better inform assessment of long-term potential economic impacts and compensatory mitigation projections that are attributable to offshore wind projects and distinguishes these impacts from other separate and distinct impacts (e.g., climate change or monitoring methodology changes);
- Considering mechanisms (e.g., long-term bonding, insurance, and federal funding) that could provide a means to compensate for unanticipated, additional adverse long-term or later impacts that were unforeseen at the completion of pre-project compensatory mitigation agreements; and
- Developing an initial approach for establishing a central communication and funding mechanism that includes clarification of the stage at which collections will take place, and a framework for how the availability of funds would be communicated to affected parties and how the funds would be managed

and distributed (e.g., reasonable and readily available documentation for fishing communities to demonstrate loss).

The States thank you for your continued partnership on this issue and we are committed to providing the support and effort needed to ensure that this effort is successful, particularly related to necessary stakeholder outreach and engagement of the fishing communities and offshore wind development industry in the development of any guidance.

We look forward to continuing ongoing coordination with BOEM and NOAA, and your strong leadership in this endeavor.

Sincerely,

Katherine S. Dykes

Katherine S. Dykes, Commissioner
Connecticut Department of Energy and Environmental Protection

D L Burg

Dan Burgess, Director
Maine Governor's Energy Office

Patrick C. Keliher

Patrick C. Keliher, Commissioner
Maine Department of Marine Resources

Bethany A. Card

Bethany A. Card, Undersecretary of Environmental Policy and Climate Resilience
Massachusetts Executive Office of Energy and Environmental Affairs

Mark Sanborn

Mark Sanborn, Assistant Commissioner
New Hampshire Department of Environmental Services



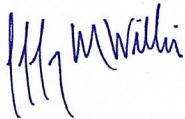
Shawn M. LaTourette, Commissioner
New Jersey Department of Environmental Protection



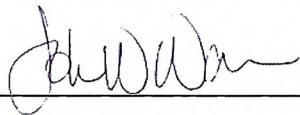
Rossana Rosado, Secretary of State
New York State Department of State



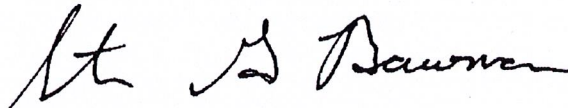
Doreen Harris, President and CEO
New York State energy Research and Development Authority



Jeffrey M. Willis, Executive Director
Rhode Island Coastal Resources Management Council



John Warren, Director
Virginia Department of Energy



Steven G. Bowman, Commissioner
Virginia Marine Resources Commission

cc:

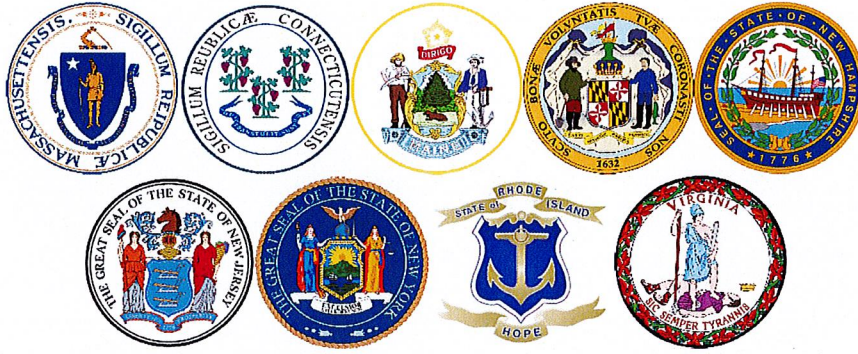
Janet Coit, Assistant Administrator, NOAA Fisheries

Jeffrey L. Payne, Ph.D., Director, NOAA Office for Coastal Management

David Kaiser, Senior Policy Analyst, NOAA Office for Coastal Management

Kerry Kehoe, Federal Consistency Specialist, NOAA Office for Coastal Management

Enclosure



Joint Governors' Letter to the Biden Administration on Prioritization of Offshore Wind Development

President Joseph R. Biden Jr.
The White House
1600 Pennsylvania Avenue, N.W.
Washington DC 20500

June 4, 2021

Dear Mr. President:

The Governors who have cosigned this letter are greatly encouraged by your Administration's recently announced commitment to developing wind energy off the coast of the United States. The expansion of the offshore wind industry creates an unprecedented opportunity for the United States to capture significant economic development activity and build equity in coastal communities while improving air quality and increasing the options for energy diversity. The importance of federal-state partnership in realizing this opportunity cannot be overstated, and we commend your Administration for the significant steps it has taken in recent weeks to address the critical areas of port infrastructure, permitting, research and development, fisheries support, and natural resource restoration and mitigation. We write both to thank you and provide recommendations to build on the significant momentum your Administration has created.

As a result of technological innovation, scale, and competition, offshore wind energy costs have fallen by more than 50% since 2016, to the benefit of both electricity users and the environment. Over the last decade, the industry has attracted world-class energy companies to develop America's offshore wind resources. As your Administration has highlighted, these companies are poised to create thousands of skilled jobs and unleash significant investment in our ports and accompanying U.S. supply chain services to build, operate, and maintain this new clean energy infrastructure. To revitalize our aging port infrastructure and deliver a new high-paying offshore wind workforce, we need continued federal leadership to prioritize the development of and provide a predictable long-term plan for the industry.

Realization of the offshore wind opportunity depends crucially on several variables, including the pace and uniformity of the federal permitting process, the degree of regional coordination among states, the

amount of available space in federal lease areas, the potential impacts on marine resources, and the availability of supporting infrastructure to deliver high-voltage power from project areas to the mainland. As such, we aim to collaborate across our states by consulting with each other on permitting challenges, natural resource consideration, identifying opportunities to coordinate schedules, and aligning construction timelines to meet states' respective clean energy targets. Doing so, we hope to utilize our joint resources to maximize the economic potential of the offshore wind industry for our country. We, the undersigned governors of Connecticut, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Virginia appreciate that your Administration has prioritized the key areas below, and we offer the following strategies to support this unprecedented opportunity to build back better:

Set long term targets for Bureau of Ocean Energy Management (BOEM) lease area scoping and establishment that are informed by state clean energy goals. State offshore wind procurement targets are increasing, and there is a substantial deficit in identified regional wind energy areas. As demand for federal lease areas is driven almost entirely by state-mandated power purchase needs, we recommend that your Administration establish a timeline for identifying, characterizing, and auctioning new federal lease areas that can support the states' offshore wind procurement timelines. This would serve to facilitate the critical runway necessary for states to achieve their development targets on schedule.

Supplement interstate coordination during project design and permitting processes. We commend your Administration for its impressive target to complete the review of 16 Construction and Operations Plans (COPs) by 2025, which will serve the much-needed purpose of expediting and creating a predictable pathway through the federal permitting process. To ensure a sustainable coexistence with our coastal uses and natural resources, we request additional federal consultation with the states and increased regional leadership on addressing environmental, fishing, and maritime concerns during and after construction of facilities. We seek to provide more certainty to developers across projects in addressing legitimate interests in marine resources and maritime industries that will share space with this new industry.

Consider setting long-term targets for offshore wind ports that can support the scale and timeline of state procurement targets. As recent targeted commitments by your Administration show, the offshore wind industry provides a significant opportunity to revitalize our ports, invest in manufacturing, and develop a specialized workforce. However, for states to procure, permit, and construct 30 GW of offshore wind by 2030 and for BOEM to sign off on 16 COPs in 4 years, significant port infrastructure and space will need to be added to stage and service the offshore wind projects in a very short time. We commend your Administration for making available funding opportunities through the U.S. Department of Transportation (USDOT) and the Department of Energy (DOE), and we recommend as a next step that these agencies adopt a long-term planning approach for port development that can help support clean energy needs. This way, construction bottlenecks in shared lease areas can be minimized or avoided by creating solutions that can be developed in advance of need.

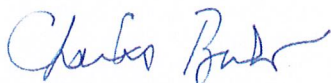
Ensure adequate transmission capacity. No offshore wind project can provide power to the grid without the supporting infrastructure to transmit high-voltage electricity to the mainland. As multiple states share common Wind Energy Areas, and in some cases the same regional power

system, transmission planning and development are best organized through regional, multi-state coordination. To meet offshore wind procurement targets while minimizing cost, we urge your Administration to: 1) instruct the Federal Energy Regulatory Commission to direct regional system operators to initiate policies that encourage collaboration across transmission systems and stimulate investment in the planning and development of offshore transmission as soon as possible; 2) as touched upon in your Administration's March 31st American Jobs Plan announcement, consider modifications to federal regulatory processes that would improve access to critical USDOT corridor "rights-of-way" to support the efficient and cost-effective onshore routing of offshore wind cable infrastructure, and; 3) direct BOEM to clearly articulate the process of permitting offshore transmission infrastructure. Together, these actions would greatly assist states and the federal government in developing an optimal framework for accommodating injections of offshore wind power onto the onshore electricity system.

Provide support for other marine industries and users. To advance offshore wind energy development in an environmentally responsible way that ensures renewable energy coexists with natural resources, ocean users, and communities, including fishermen and the tribes, we urge the federal government to provide leadership on regional natural resource impact assessment and mitigation frameworks for demonstrated negative impacts on marine resources, fisheries, and local cultures. Additionally, funding and prioritization from the Administration is needed to support the monitorization of the Commerce Department's scientific surveys that inform fisheries' quotas and regulation (specifically those conducted by the National Oceanographic and Atmospheric Administration and the National Marine Fisheries Service), adapting precedent from other industries in the Gulf of Mexico where appropriate.

We once again express our gratitude for your commitment to offshore wind. We hope the White House considers and adopts these strategies as a priority and coordinates these efforts together with relevant federal agencies and states. To this end, we look forward to working closely with your Administration to discuss agency-specific recommendations as this industry begins taking shape so that we can maximize the local and national benefits from this unprecedented opportunity.

Sincerely,



Governor Charlie Baker, Commonwealth of Massachusetts



Governor Ned Lamont, Connecticut



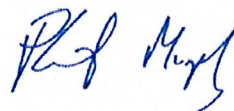
Governor Janet Mills, Maine



Governor Larry Hogan, Maryland



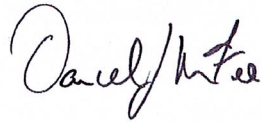
Governor Christopher Sununu, New Hampshire



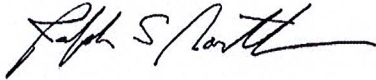
Governor Philip Murphy, New Jersey



Governor Andrew Cuomo, New York



Governor Daniel McKee, Rhode Island



Governor Ralph Northam, Virginia